

NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information



Editor - Captain F. W. Farrar. (MC). U.S.N.

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(Not Restricted)

Some Effects of the Rice Diet Treatment of Kidney Disease and Hypertension: Slices of kidney tissue thin enough to permit optimal diffusion can be kept alive for a few hours and studied in the Warburg apparatus. This apparatus makes possible the quantitative control in the suspending fluid of the concentration of oxygen, carbon dioxide, sodium bicarbonate, sugar, amino acids, ketoacids, lactic acid, etc. What these kidney cells do under varying conditions can be determined periodically by manometric measurements.

If, in the course of a disease, renal tissue is destroyed and replaced by a scar, obviously the only metabolic reactions to be found will be those of the scar tissue and no longer those of the kidney cells. Between normal and completely destroyed cells, there are the following possibilities as far as disturbances of cellular metabolism are concerned:

1. The cells are uninjured, but metabolize in a pathological environment.
2. The cells are injured, but the environment in which they metabolize is normal.
3. The cells are injured and metabolize in a pathological environment.

In order to learn something about the chemical composition of such pathological environments, the author produced sterile cantharidin blisters on the skin of normal people and of patients with various diseases, and then measured the metabolism of the leukocytes in the blister fluid and the chemical changes produced by them. The following table shows a decisive change in some biologically essential substance during inflammation in normal persons:

	<u>Serum</u>	<u>Fluid from Sterile Blister of Skin</u>
Oxygen tension (mm. Hg.)	100	6
Sugar (mg./100 c.c.)	90	6
Lactic Acid (mg./100 c.c.)	10	125
Bicarbonate (10 ⁻³ molar)	25	9
PH	7.4	6.3

In studying what effects such environmental changes would produce in the metabolism of kidney cells it was found (1) that the anaerobic splitting of sugar into lactic acid was markedly dependent upon changes in the sodium bicarbonate, sugar, and hydrogen ion concentration, (2) that the rate of oxidation was to a large extent independent of sodium bicarbonate, sugar, and hydrogen ion concentration but was dependent on oxygen concentration, (3) that the deaminization of amino acids and the formation of ammonia were inhibited by lowered oxygen

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concentrations, and (4) that following restoration of optimal oxygen concentration after an hour of oxygen deprivation, the cells were still able to deaminize amino acids and to form ammonia, but they had lost the ability to oxidize ketoacids.

From these observations it was reasoned that should the oxygen supply to any one kidney cell be decreased by some pathological condition, and should it not be possible to increase the supply of oxygen to that cell, it might be possible to increase the oxygen concentration in the environment of the cell by decreasing its oxygen demand through a reduction in the amount of work required from this cell. Also, should the rate of oxidation of ketoacids in any one diseased kidney cell be decreased, it might be possible to reduce the amount of ketoacid offered to the cell provided that those substances from which ketoacids are derived could be removed from the diet. Deductions of a similar kind might be drawn from observations of the role played in renal metabolism by amino acids, sugar, sodium bicarbonate, etc.

This increased understanding of kidney cell physiology and the trend of reasoning therefrom led the author to study the rice diet as an approach to the problem of effecting compensation of kidney metabolic dysfunction. He states that the rice diet has produced rather satisfactory results.

The consensus at the present time is that dietary treatment is useful in kidney disease but of little or no value in hypertension without obvious renal involvement. Compared with diets previously used in hypertension, the rice-fruit diet is rigid. It contains in 2,000 calories about 5 grams of fat and 20 grams of protein derived from the rice and fruit and not more than 0.2 grams of chloride and 0.15 grams of sodium.

Against the argument by those looked upon as authorities in this field that this diet constitutes nothing but starvation and that at least 45 grams of protein are needed to maintain protein equilibrium, the author states that the figure of 45 grams has no other basis than the 7 grams of nitrogen excreted per day by people who are fasting and represents only the body's effort to meet its caloric requirement by breaking down its own protein. The daily urinary nitrogen excretion of patients who have followed the rice diet for two months or more averages 2.26 grams. This means that with a daily intake of little more than 15 grams of protein, because of the protein-sparing effect of carbohydrates, the nitrogen equilibrium is maintained. In fasting, the daily urea nitrogen excretion in the urine is about 5.5 grams. The average daily urea nitrogen excretion in the urine of patients who have followed the rice diet for two months or more is 1.1 grams. The following table shows the concentrations of four constituents of urine of patients when on a normal diet and when on the rice (after two months):

(Not Restricted)

	<u>Normal Diet</u>	<u>Rice Diet</u> (after 2 months)
Urea N.....	12 Gms. per liter	1.1 Gms. per liter
Chloride.....	6 " " "	0.1 " " "
Sodium.....	4 " " "	0.01 " " "
Potassium.....	2 " " "	3.0 " " "
Sodium/Potassium Ratio	2	0.003 " " "

In fasting, the blood urea nitrogen concentration is higher than it is normally. In patients on the rice diet, the urea nitrogen concentration is below the level of normal (average 6.6 mg. per 100 c.c.).

In starvation, hemoglobin and plasma protein concentrations decrease; in patients on the rice diet, the hemoglobin and plasma protein levels are maintained.

It is pointed out that the low-fat content of the rice diet fits in well with the relationship between hypercholesterolemia and hypertensive vascular disease, especially with regard to vascular retinopathy, coronary disease, and arteriosclerosis. In a series of 79 patients with hypertensive vascular disease, 53 (67 per cent) had a cholesterol concentration of at least 220 mg. per 100 c.c. of serum at the beginning of the treatment. With the rice diet, the cholesterol concentration in 52 patients decreased an average of 74 mg. per 100 c.c. and became normal in 37 of these 53 patients. In one of the 53 patients, the hypercholesterolemia increased from 250 to 260 mg. These 79 patients at the time of the cholesterol studies had been on the rice diet for from 6 to 288 days. The average decrease for the 79 patients was 57.3 mg.

The author states that no matter which single factor in the rice diet was of greatest importance in compensating the various manifestations of renal metabolic or excretory dysfunction, it remains a fact that in 203 of 322 patients, on most of whom other forms of therapy had previously been tried, the rice diet led to objective improvement. Of 100 patients with primary kidney disease, 65 per cent showed improvement on the rice diet. Of 222 patients in whom a diagnosis of hypertensive vascular disease was made, 62 per cent improved.

An electrocardiographic study was made on 100 patients with hypertensive vascular disease before treatment. The tracings in 31 of these patients showed inverted T-1 waves. In recheck studies made when these patients had been on the rice diet for 2 months or longer, the T-1 waves had become upright in the tracings of 11 of the 31 patients whose electrocardiograms had previously shown inverted T-1 waves. In none of the 100 patients did the reverse occur.

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In 77 of 87 patients with hypertensive vascular disease, the heart became smaller in size. The average decrease in the transverse diameter was 10.1 per cent. In 10 of the 87 patients, the heart became larger, with an average increase in the transverse diameter of the heart of 2.5 per cent.

In 44 patients with hypertensive vascular disease who had papilledema, retinal hemorrhages, or retinal exudates, and who followed the rice diet for two months or longer, the retinopathy was arrested. In 20 of these 44 patients, clearing of the retinopathy was partial; in 20 it was complete. (Bull. New York Acad. Med., July '46 - Walter Kempner)

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Penicillin Treatment of Thoracic Empyema: On the basis of the accumulated experience in a series of 24 cases of empyema and from a review of the literature, it seems evident that more than one-half of all cases of empyema can be cured by repeated aspirations and local instillations of penicillin into the pleural cavity. Pneumococcal, beta hemolytic streptococcal and staphylococcal empyemas are more favorably affected than those due to anaerobic streptococci or to mixed infections. The associated pathologic lesions in the lungs and elsewhere may account for much of the differences and, in addition, the presence of organisms not susceptible to penicillin may account for some of the failures.

In those patients (among the 24 treated by the authors) whose condition reacted favorably, the empyema fluid usually became sterile and the amount of exudate which could be aspirated diminished appreciably after three or less intrapleural penicillin instillations. The changes in the fluid following therapy, however, were not uniform and could not always be relied upon as a guide for further therapy or as an indication for operation.

It is more than likely that the early and adequate use of penicillin in pneumonia will materially reduce the incidence of empyema, in addition to curing by the use of aspirations and intrapleural injections of the antibiotic a large proportion of empyemas already present when the patients are first seen.

The details of the treatment of empyema by aspiration and penicillin are still to be worked out. It seems reasonable to precede the intrapleural instillations of penicillin by irrigation with saline, especially where there is thick pus. This should facilitate the more complete removal of exudate and debris and permit better action of the penicillin. It was not done consistently in this series of 24 cases or in most of those reported by others. From the standpoint of the adequacy of the levels of penicillin in the pleural fluid, instillations at intervals of about 48 hours should be adequate provided that doses of 50,000 units or more are used. Early in the treatment, however, thorough aspiration

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of the pus seems highly important and should probably be done at 12- or 24-hour intervals until there is marked improvement.

The indications for rib resection and the optimum time when it should be done after penicillin treatment has been instituted remain to be worked out and will vary in different patients. The underlying pathology and the presence of mechanical factors which prevent adequate aspiration and local treatment will be important considerations. Loculation of fluid, excessively thick pus, fibrin clots, bronchopleural fistula, prolonged or chronic empyema, thick and rigid pleura, chronic draining sinuses, and the persistence of organisms not susceptible to penicillin are all factors which interfere with the complete success from treatment with aspirations and penicillin alone and are likely to make surgical interference necessary. It should be pointed out, however, that these factors by themselves do not necessarily prevent a cure by the conservative therapy. In many of the reported cures there had been thick pus and fibrin clots. A number of cases with multiple empyema pockets and even with bronchopleural fistula have also been cured without surgical drainage.

In general, as long as the patient continues to improve, the cultures remain sterile, and the fluid diminishes in quantity, it is safe to continue with conservative therapy. Most of the patients who eventually are cured improve markedly within the first two weeks. At the end of that period it should be possible to decide whether further conservative treatment is justified or whether operation should be undertaken. There seems to be no critical time after which it is unsafe to continue with the aspirations.

If empyemas are recognized early, the penicillin therapy can actually be started much sooner than it is usually safe to undertake open drainage. It is probably in the early cases that the best results can be expected from the medical treatment. Even in cases in which the pleura is already thick, many reports state that there had been steady regression of the pleural thickening over a period of several months, and that the final results after nonsurgical therapy were at least as satisfactory as in other cases following operation. The periods of hospitalization and of disability, moreover, are considerably shortened if the operation can be avoided.

The effects of penicillin on the putrid empyemas were quite remarkable. It is no longer necessary to consider putrid empyema as an acute surgical emergency. With the local use of penicillin, supplemented in some cases with intramuscular injections, the condition of the patient may be improved markedly so that he is a much better operative risk, and in a number of cases it may be possible to effect a cure without operation. In the cases treated by the author the foul odor of the putrid empyema cleared promptly after penicillin therapy was started.

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The treatment of the mixed infections of tuberculous empyemas has likewise undergone an important change as a result of the use of penicillin. Although the tuberculous infection persists, other organisms which are sensitive to penicillin can be eradicated. A thick purulent empyema may thus be converted to a serous tuberculous effusion with considerable improvement in the patient's condition.

It is not desired to create the impression that simple aspirations and penicillin therapy have replaced rib resections and other forms of surgical drainage. These operations will still be necessary in many cases. It is now possible, however, to cure a larger proportion of empyemas than ever before without resorting to open surgical drainage. Whenever this can be accomplished, the patient will have a briefer illness and a shorter period of disability than if operation is employed. (Ann. Int. Med., March '46 - Brown et al.)

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Report on the Treatment of Meningitis Due to Hemophilus Influenzae with Streptomycin: Ten cases of purulent meningitis in infants and children, due to Type B Hemophilus influenzae in 8 and to an untypable strain in 2, were treated with streptomycin with complete recovery in 8 cases. The drug was given intramuscularly in doses ranging from 15,000 to 125,000 micrograms every three hours, and intrathecally in amounts varying from 10,000 to 25,000 micrograms every twenty-four hours.

Two of the 10 patients with influenzal meningitis treated with streptomycin died. One showed complete absence of response to the antibiotic agent; this was one of the two cases due to the untypable strains. The other (a type B) died of an intercurrent Staphylococcus aureus bronchopneumonia, which was not affected by penicillin.

The blood and spinal fluid were cleared of the causative organisms in from twenty-four to forty-eight hours in all cases except the 2 due to atypical strains.

No relapses or sequelae of the influenzal meningitis were observed in any of the recovered patients over a period of from six to ten weeks following the cessation of streptomycin treatment.

No toxic reactions attributable to streptomycin were observed in the hematopoietic, nervous, or urinary systems.

Two of the patients with type B organisms, after they were completely free of H. influenzae in both the spinal fluid and blood for several days and were apparently recovering clinically, developed intercurrent complications due to Staphylococcus

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aureus. These complications (with bacteremia in each patient) were meningitis in one patient who recovered and bronchopneumonia in the other who succumbed. It is striking that in both these patients these staphylococci appeared in pure culture in the nasopharynx before they invaded more deeply. It is possible that streptomycin, by altering the relation of the various organisms in the pharynx, may, in some situations, allow relatively insusceptible organisms like Staph. aureus to increase rapidly in numbers and virulence.

Since Staph. aureus infections may occur as complications during treatment with streptomycin, careful watch must be maintained for early signs of this type of involvement. The use of penicillin as soon as Staph. aureus becomes the predominant organism in the nasopharynx, even before the evidence of invasion is present, is strongly recommended. The possibility of administering penicillin and streptomycin together from the time of starting treatment started suggests itself.

Streptomycin appears to be the drug of choice in the treatment of meningitis due to H. influenzae. It should be administered by both intrathecal and intramuscular routes. There seems to be no need to combine the antibiotic agent with one of the sulfonamides or with type-specific antiserum unless no beneficial effects result from the use of large amounts of streptomycin given for at least seventy-two to ninety-six hours. (New England J. Med., July 25, '46 - Weinstein)

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Use of a Potassium Tellurite Medium in the Detection of the Organisms

Causative of Diphtheria: Doris Kellogg and Reuben Wende, working in the City Health Laboratory of Houston, Texas, undertook a study to determine the number of diphtheria carriers that were being missed by the use of Loeffler's medium as a screening or preliminary test.

They instituted the use routinely of a potassium tellurite medium in addition to Loeffler's blood serum medium. The potassium tellurite medium was a heated, 7 per cent blood agar with a concentration of 0.04 per cent of potassium tellurite and prepared as follows:

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Difco's Dextrose proteose No. 3 agar..... 4.2 Gm.
Distilled water..... 100.0 ml.
Sterilize in the autoclave at 15 lb.
pressure for 20 min.
Cool to 75° C. and add aseptically 5 ml.
of a sterile 0.8 per cent aqueous
potassium tellurite solution (sterilized
in the autoclave at 15 lb. pressure for
20 min.).
Fresh rabbit blood..... 7.0 ml.
Heat medium for from 10 to 15 min. at
75° C. and then cool before pouring plates.

Loeffler slants, including in the tubes the nose and the throat swabs with which they were inoculated in the home of the patient, were brought to the laboratory by the quarantine nurse. The swabs were removed and each streaked upon half of a potassium tellurite plate. No attempt was made to maintain the identity of the nose and throat swab inoculations on the Loeffler's or tellurite media.

The results from the study of these parallel cultures for the detection of C. diphtheriae from 622 nose and throat swabs from convalescents and contacts showed 222 positives on the tellurite medium, of which 113 were also positive on Loeffler's medium. Of 36 cultures microscopically positive on Loeffler's medium but not confirmed on tellurite, C. diphtheriae was proved to be present in 1 culture; diphtheroids only could be isolated from 15; and the others were not completely investigated.

The use of a tellurite medium is valuable if for no other reason than that it relieves the perplexity of the examiner in trying to decide in the case of Loeffler slants whether certain diphtheria-like organisms under the microscope are really diphtheria bacilli or not.

Because of the small numbers of C. diphtheriae frequently present in swab cultures from convalescents and carriers, it is often difficult to find them - even though they may possess typical characteristics - among other bacteria that grow uninhibited and abundantly upon Loeffler's medium. It is often impossible to find and identify small numbers of C. diphtheriae among numerous diphtheroids.

With Loeffler slants there is the occasional difficulty that when other organisms, such as a sporing aerobe, reduce the surface of the Loeffler

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culture to a fluid, the conditions may not be favorable for the growth of the diphtheria organism.

In these studies, it was sometimes observed that although the Loeffler culture was found negative, the number of colonies of C. diphtheriae on the tellurite plate was enormous, and the explanation that the organisms could have been so few as to be missed by microscopic examination would otherwise have been tenable. Some have stated that unless Loeffler's medium is very carefully prepared with particular attention to temperature, time, and pressure during sterilization, the morphology of some strains of C. diphtheriae may be so greatly altered as to make them unrecognizable. It seems not unlikely that these morphological variations occur regardless of the usual methods of preparing the medium.

Loeffler's medium, however, has one very great advantage in that it produces rapid growth. Slowness of growth of C. diphtheriae on potassium tellurite medium is its one disadvantage as used for detection and isolation purposes. A few strains of diphtheria bacilli form recognizable colonies on tellurite media in 18 hours, but most of them develop more slowly, requiring from 24 to 48 hours. It is unsafe to report negatively the result of a potassium tellurite plate culture in less than 48 hours. Since cell morphology often is not typical upon the tellurite medium, it is usually necessary to transfer a colony to a Loeffler slant for the later study for typical morphology; however, C. diphtheriae can generally be identified readily by colony characteristics by one experienced in the use of tellurite media.

Loeffler's serum medium, although it misses some positives, usually gives a positive result within 18 hours in the majority of acute clinical cases. For this reason, in all cases for diagnosis and where there is urgency, Loeffler's medium should be used.

However, public health laboratories generally receive more nose and throat cultures for determining upon the release of convalescents and for detecting carriers among contacts than for diagnosis. It is in the examination of such cultures that tellurite medium has proved so superior to Loeffler's medium, and it is believed that the delay of a day or two in reporting is an insignificant matter compared with the marked increase in numbers of positive results obtained.

The authors conclude that the use of a potassium tellurite plating medium in the detection of C. diphtheriae by colony development and colony characteristics is considered a much more exact laboratory procedure than the use of Loeffler's serum medium for the determination of cell morphology by microscopic examination. (Am. J. Pub. Health, July '46)

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(Not Restricted)

Improvement of the Nasopharyngeal Swab Method of Diagnosis in Pertussis by the Use of Penicillin: In using the nasopharyngeal swab method for the bacteriological diagnosis of pertussis, a small loopful of 0.85 per cent sodium chloride solution is placed upon the surface of the medium (Bordet's) and the charged swab is passed back and forth several times through the drop of saline. The plate is then streaked with a long, flexible loop. In the improved technic a loopful of penicillin solution (containing 1,000 Oxford units per ml.) was substituted for a loopful of 0.85 per cent sodium chloride solution. When too strong a concentration of penicillin is used, the growth of Hemophilus pertussis is inhibited. In spite of the fact that the organism is generally considered to be insensitive to penicillin, the observations of the authors indicate that it is sensitive to strong concentrations. This effect occurs in vivo as well as in vitro.

For comparison, cultures were taken chiefly from hospitalized patients during various stages of whooping cough, and plated simultaneously by the two methods.

The results of this study showed that by using the improved penicillin-solution technic a high percentage (97.6 per cent) of positive cultures of Hemophilus pertussis was obtained from patients in various stages of whooping cough as compared with the significantly lower percentage (76.5 per cent) of positive cultures obtained by the saline-solution method. (Am. J. Pub. Health, May '46 - Bradford et al.)

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(Not Restricted)

Large-Scale Routine Examinations of Stool Specimens for Parasites:

Hesselbrock, Lippincott, and Palmer, working in the U. S. Army Harmon General Hospital at Longview, Texas, carried out routine and certain special coprologic studies in a total of 2,464 patients over a period of six months. Altogether 14,250 stools were examined.

One group of patients studied numbered 1,972 from whom 4,465 specimens were examined by a modified zinc sulfate concentration method and in addition, if the specimen was liquid, by a direct smear. A pea-sized portion of the specimen was selected at random and emulsified by trituration in aqueous zinc sulfate solution of specific gravity 1.180 in a 6 c.c. test tube. The tube was then filled to the brim with the zinc sulfate solution and a cover slip was carefully dropped on the top in contact with the surface film. After the tube had stood upright for from one-half to two hours, the cover slip was picked off vertically, placed on a drop of D'Antoni's iodine stain on a slide, and examined. The results from these examinations are shown in the following two tables:

(Not Restricted)

PARASITE	PACIFIC AREA		EUROPEAN AND MEDITERRANEAN THEATERS		ZONE OF THE INTERIOR	
	Number of men found infected	Per cent of men found infected	Number of men found infected	Per cent of men found infected	Number of men found infected	Per cent of men found infected
Hookworm.....	136	10.8	27	5.0	12	6.8
<i>Strongyloides stercoralis</i>	13	1.0	1	0.2	0	0
<i>Trichocephalus trichiuris</i>	41	3.3	7	1.3	2	1.1
<i>Ascaris lumbricoides</i>	16	1.3	4	0.7	0	0
<i>Hymenolepis nana</i>	1	0.08	0	0	1	0.6
<i>Endamoeba histolytica</i>	12	1.0	2	0.4	2	1.1
<i>Giardia lamblia</i>	1	0.08	4	0.7	0	0
Total number of men examined.....	1,261		535		176	
Number of infections found.....	220		45		17	
Percent of infections.....	17.4		8.4		9.7	
Percent of patients infected.....	14.8		6.2		6.3	

DATA ON POSITIVE SPECIMENS OF STOOL FROM INFECTIONS LISTED

PARASITE	NUMBER OF SPECIMENS EXAMINED FROM KNOWN INFECTED INDIVIDUALS	NUMBER OF POSITIVE SPECIMENS	PER CENT OF POSITIVE SPECIMENS
Hookworm.....	1,129	345	30.6
<i>Strongyloides stercoralis</i>	109	52	47.7
<i>Trichocephalus trichiuris</i>	324	79	24.4
<i>Ascaris lumbricoides</i>	138	79	57.2
<i>Hymenolepis nana</i>	7	5	71.4
<i>Endamoeba histolytica</i>	176	30	17.0
<i>Giardia lamblia</i>	34	28	82.4

(Not Restricted)

It is seen that the percentage of infections with pathogenic intestinal parasites was approximately twice as great in men from the Pacific Area as in those from the European and Mediterranean Theaters or in those from the Zone of the Interior (the continental U.S.) Hookworm was the most common infection in men from each of the areas. However, clinical hookworm disease was not seen in the hospital, and egg counts of stools from 20 men chosen at random showed that the estimated average worm burden was only 46, with an extreme of 200. Infections of this degree may be considered insignificant in adults who are maintaining good nutrition.

A second group in which 11,464 examinations were made on 9,586 stools consisted of 463 patients evacuated from Leyte because of infections with Schistosomia japonicum. A combination of technics was used: direct smear on 9,586 specimens, modified zinc sulfate on 832 specimens, and gravity sedimentation on 1,051 specimens. Excluding schistosomes the results were as follows:

PARASITE	NUMBER OF INFECTIONS	PER CENT POSITIVE
Hookworm.....	76	16.4
<i>Strongyloides stercoralis</i>	10	2.2
<i>Trichocephalus trichiurus</i>	53	11.4
<i>Ascaris lumbricoides</i>	15	3.2
<i>Hymenolepis nana</i>	5	1.1
<i>Endamoeba histolytica</i>	16	3.5
<i>Giardia lamblia</i>	3	0.6
Average number of specimens of stool examined from each individual.		20.4
Per cent of infections, as compared with number of patients.....		38.4
Per cent of patients infected.....		31.5

A third group consisted of 29 patients with schistosomiasis whose daily stools over a period of several days were studied by direct smear, zinc sulfate centrifugal flotation, sedimentation by gravity, and sedimentation by centrifugal methods. Examinations numbering 796 were carried out on 199 specimens. The following data show the comparative efficiencies of the technics as used by the authors in demonstrating the parasites (other than schistosomes) that were found:

(Not Restricted)

PARASITE	NUMBER OF MEN FOUND TO BE INFECTED BY COMBINATION OF ALL TECHNICS	NUMBER OF MEN FOUND TO BE INFECTED BY EACH TECHNIC				NUMBER OF STOOLS EXAMINED BY EACH TECHNIC	NUMBER OF STOOLS FOUND TO BE POSITIVE BY EACH TECHNIC			
		Direct smear	Zinc sulfate	Sed. by centrif.	Sed. by gravity		Direct smear	Zinc sulfate	Sed. by centrif.	Sed. by gravity
Hookworm.....	6	5	6	6	5	54	21	40	29	31
<i>Trichocephalus trichiuris</i>	9	9	4	8	7	78	13	5	9	8
<i>Hymenolepis nana</i>	1	1	1	1	1	12	2	9	3	5
<i>Endolimax nana</i>	7	5	7	6	4	67	13	38	16	7
<i>Endamoeba coli</i>	3	2	3	3	3	27	6	13	10	4
<i>Iodamoeba butschlii</i>	2	0	2	0	0	27	0	6	0	0
<i>Giardia lamblia</i>	2	2	2	2	0	24	4	6	2	0

It is interesting to note that only 10 of 2,464 patients were found to be infected with Giardia lamblia. It is suspected that routine suppressive treatment for malaria with atabrine was responsible for this low figure.

This last table reveals that, except in the case of trichocephaliasis, the zinc sulfate centrifugal flotation technic proved so superior to the other technics that in routine use other technics would have been superfluous. The modified zinc sulfate technic is not as efficient as the original more laborious and time-consuming centrifugal flotation technic, and this relative inefficiency must be overcome by the examination of an increased number of specimens.

Assuming that the 463 patients from Leyte constituted a group which is comparable to the 1,261 patients from the entire Pacific Area, an opportunity is afforded to determine the additional benefits which are to be gained by carrying the thoroughness of the examination to an extreme. In the Leyte group, an average of 24.8 examinations was made by a combination of three technics on an average of 20.4 specimens from each man; 38.4 per cent of the men examined were found to be infected. The 1,261 patients from the entire Pacific area submitted an average of 2.3 specimens which were examined by only one technic (two technics if the stool was liquid); 17.4 per cent of infections were found. The more thorough effort gave positive results more than twice as often; however, more than 30 times as much effort was required.

(Not Restricted)

It is evident, as has been emphasized many times in the literature, that stools must be examined serially and found to be negative before a patient can be assumed to be parasite-free. This statement has been found to be true, regardless of the technic used. However, the actual optimum number of stools to be examined routinely should be determined by the efficiency of the individual technic. In the laboratory where many stools must be examined daily and where personnel and time are limiting factors, a compromise must sometimes be struck in the selection of the technic and in the number of examinations which are to be made. The results of the authors prove that their usual routine laboratory test fails to detect half of the demonstrable infections. However, it is often impractical for a hospital laboratory to increase the amount of work of its staff thirty-fold in order to double the incidence of finding parasites in routine examinations of stools. It is hoped that these figures will help to shed light on the practical interpretation of routine coprologic studies. (Am. J. Clin. Path., April '46)

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(Not Restricted)

The Therapeutic Effect of Folic Acid in Tropical Sprue: Spies et al., working at the School of Tropical Medicine, San Juan, Puerto Rico, in a study of sprue in the tropics undertook an investigation to determine the effects that might result in sprue from the therapeutic use of folic acid.

The previous studies of Spies and his associates have shown that following treatment with folic acid there is a remarkable response of improvement in the blood picture of persons with Addisonian pernicious anemia, nutritional macrocytic anemia, the macrocytic anemia of pregnancy, and the macrocytic anemia of pellagra.

Macrocytic anemias occur throughout the world. Addisonian pernicious anemia occurs more frequently in temperate zones, and sprue occurs chiefly in the tropics.

From a number of emaciated patients who had glossitis and diarrhea, and whose stools were light-colored, bulky, and frothy, these workers chose and hospitalized five patients. The additional criteria used in their selection were as follows: (1) The patient must have macrocytic anemia as determined by Wintrobe indices. (2) The bone marrow must show the typical erythroblastic arrest seen in macrocytic anemia. (3) The erythrocyte counts must be below 2,500,000. (4) The patient must be untreated, or he must not have been treated recently enough to interfere in any way with the evaluation of the effect of folic acid. (5) He must have persistently low reticulocyte counts during the period of observation.

(Not Restricted)

Four of the patients were restricted to a diet devoid of meat, kidney, yeast, liver, and other meat products. The fifth patient received some meat and meat products.

Following the oral administration of folic acid, the clinical improvement of the patients was so striking that all observers noticed on the third or fourth day an increase in the sense of well-being, strength, and vigor. The patients who had been unwilling to eat now ate everything on their trays and requested more. A part of the clinical improvement included a disappearance of the "indigestion," anorexia, sore tongue, pallor, and exhaustion, and a decrease in the amount of the stools. This occurred at about the time of the onset of remission. The remission itself was characterized by a reticulocytosis beginning on the third or fourth day and peaking around the sixth. As seen in the table, the reticulocytosis, in turn, was followed by an increase in the number of red blood cells and the hemoglobin.

ANTIANEMIC EFFECT OF FOLIC ACID IN TROPICAL SPRUE

Case No.	RBC (millions)		Hg. (grams)		Reticulo- cytes			Dosage of Folic Acid			Diet
	Initial day	Final day	Initial day	Final day	1st day of rise	Day of peak	% at peak	Daily dosage mg.	No. of days	Total mg.	
1	.6	2.25	2.4	7.5	4	5	18.0	50	18	900	No meat products or yeast
2	1.0	2.02	4.9	6.9	5	6	25.4	50	14	700	
3	1.7	2.48	8.4	10.1	3	5	17.0	50	14	700	
4	2.3	2.5	10.1	11.0	3	4	7.8	50	12	600	
5	2.1	2.7	9.9	10.1	4	7	21.2	50	8	400	Meat al- lowed

(Not Restricted)

These patients showed a typical hematopoietic response following the administration of folic acid under conditions which make it certain that the folic acid produced the results.

Accordingly, it must be stated that these findings demonstrate clearly that folic acid produces beneficial effects in persons with tropical sprue in relapse. These and additional patients are being investigated to determine the long-time effects of folic acid on this disease. Some of them will receive a diet devoid of meat and meat products, and others will receive an antisprue diet.

Since the submission of this report, Spies and his associates have treated additional cases of tropical sprue with synthetic L. casei factor (folic acid) and have obtained in every case results similar to those reported here. (Science, July 26, '46)

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(Restricted)

Changes of Erythrocytes in Stored Blood: Changes in the physical and chemical properties of red cells during storage of blood in (1) simple citrate, (2) a neutral citrate-glucose, and (3) an acid citrate-glucose (ACD-I) solution were studied. It was found that during storage the thickness of erythrocytes increases, their diameter decreases, and their apparent surface area diminishes. These alterations are interpreted as manifestations of progressive deterioration of the cell. They progress most rapidly in blood in simple citrate, and most slowly in blood in acid citrate-glucose solution. Changes in the corpuscular volume appear to be determined by physico-chemical relationships and not to be related to the functional state of the cell.

Osmotic hemolysis of erythrocytes becomes similarly altered in a progressive manner during storage - at a rapid rate in simple citrate, and slowest in acid citrate-glucose solution.

The plasma pH decreases to a value of 7.1 in simple citrate solution, and to a value below 6.6 in the glucose-enriched media in direct relation to the amount of lactic acid accumulated.

The ability of the red cells to glycolyze is lost first in simple citrate solution and is preserved longest in acid citrate-glucose solution.

The inorganic phosphorus increases sharply in the red cells, with corresponding decrease of the organic acid-soluble phosphorus, but changes in a more gradual manner in the plasma. Adenosine triphosphate, a co-enzyme of blood glycolysis, is preserved considerably longer in blood in ACD solution

(Restricted)

than in the 2 neutral media. Maintenance of adenosine triphosphate appears of importance for the preservation of the metabolic function of erythrocytes.

Decreases of potassium and increases of sodium in erythrocytes reported by others have been confirmed. During storage the total cation content of erythrocytes decreases. This fact and the constancy of the corpuscular volume of erythrocytes in ACD solution during storage are interpreted as indicating loss of cations on the acid side of the iso-ionic point of hemoglobin, in direct proportion to the dissociation of hemoglobin as a cation, with the osmotic characteristics of the cells remaining constant.

Judged by various indices the state of erythrocytes of citrated blood after 8 days is approximately equivalent to their state in neutral citrate-glucose after 18 days, and in ACD solution after 33 days.

In a study of 6 acid preservative solutions, none was found which exhibited better preservative qualities than ACD-I solution. There was some indication that one of the modifications, which was hypertonic, resulted in inferior preservation of erythrocytes. Lactic acid did not appear to be a deteriorative factor of major importance.

A comparison of Alsever's solution with ACD-I solution indicated that it possessed inferior preservative qualities. The effect of storage of blood at 25° C. in Alsever's solution was a great acceleration of deteriorative processes within the red cell.

A study of the osmotic characteristics of the various preservative solutions and of the corpuscular volume of erythrocytes indicated that addition of Alsever's and McGill II solutions resulted in only minor deviations of the electrolyte concentration of blood from the normal, while the addition of deGowin's solution produced a decrease of the electrolyte concentration to less than one-half of normal with profound changes in the osmotic behavior of the cells. The observed corpuscular volume of erythrocytes in 5 acid and 2 neutral preservatives was in good agreement with predictions based on consideration of the osmotic and membrane equilibria of the red cell and on the assumption that red cells lose cations below the iso-ionic point of hemoglobin in amounts proportional to its ionization as a cation.

In the comparison of 3 dilutions of ACD solution it was found that the extent of dilution of blood may be reduced to 15 c.c. per 100 c.c. without affecting the preservation of red cells; also, that the amount of glucose may be reduced to one-half of that in the original ACD-solution. A greater variability among bloods of different individuals as compared with different blood samples of one individual has been demonstrated.

(Restricted)

The preservation of red cells derived from blood collected in simple citrate solution is improved by resuspension in acidified fluids, but even then is inferior to the preservation of red cells derived from blood collected in ACD solution. ACD cells are as well preserved in neutral as in acid solution, and may be advantageously stored in the packed state. Even under the best conditions the preservation of separated red cells is inferior and more variable than that of corresponding whole blood. Addition of globulin, gelatin, and oxypolygelatin to a resuspension fluid did not modify the rate of deterioration of red cells. (OEMcmr-381, Rapoport, Univ. of Cincinnati, MS. for publication - CMR Bulletin #78)

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(Not Restricted)

Evaluation of Benadryl as a Therapeutic Agent for Vasomotor and Allergic Rhinitis: Benadryl was given to 72 patients whose complaints embraced vasomotor rhinitis, definite perennial allergic rhinitis and nasal allergy associated with asthma. Marked improvement or complete relief from nasal congestion and its associated symptoms occurred in 50 per cent of the group with vasomotor rhinitis and in 42.8 per cent of the group with perennial allergic rhinitis. Only 4 of the 8 patients with associated asthma were definitely improved, with none of these obtaining complete subsidence of the thoracic symptoms and physical findings. One patient with pseudo-Meniere's syndrome obtained complete relief; another was not helped. Of the whole group, 25 per cent obtained complete relief while taking Benadryl; 20.8 per cent were definitely improved; and 54.1 per cent experienced only very slight or no improvement.

Benadryl may be added to the list of drugs to be used in controlling temporarily vasomotor and perennial allergic rhinitis until thorough studies of the patient can be made and other therapeutic procedures instituted to control permanently the vasomotor and allergic phenomena. The authors recommend that the drug not be given for a few days preceding cutaneous testing for allergy, because its effect may interfere with the wheal and pseudopodia formation in response to the allergens used.

From this investigation it is concluded that a physician cannot expect more than one-half of the people suffering from vasomotor and perennial allergic rhinitis to be benefited by the use of Benadryl. There is no evidence at present that a patient will be permanently relieved of his nasal and associated symptoms after withdrawal of this antihistamine drug following its prolonged administration. (Arch. Otolaryng., June '46 - Brown and Owen)

Note: See Bumed News Letter of February 1, 1946, page 6 and April 26, 1946, page 11 for items regarding Benadryl.

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(Not Restricted)

Treatment of Various Infections with Penicillin X: One hundred and four patients with various infections were treated with penicillin X. Good results were obtained in those infections caused by the hemolytic streptococcus, pneumococcus, staphylococcus, and the gonococcus. There was no evidence that penicillin X produced any better results than penicillin G in these infections nor that it was effective in other diseases which do not respond to penicillin G. The only clinical evidence of the superiority of penicillin X over penicillin G was that a satisfactory therapeutic response could be obtained when injections of 50,000 units were given as infrequently as every six hours. These results may be explained by the fact that higher and more prolonged serum concentrations of penicillin were usually obtained from the administration of penicillin X than from equivalent doses of penicillin G.

The authors postulate that the chief value of penicillin X may, in the future, be found in infections in which the causative organism may prove to be relatively resistant to penicillin G and yet be sensitive to penicillin X.

Further clinical observation on a larger number of patients is necessary before the relative value of the two types of penicillin can be completely evaluated. (Ann. Int. Med., July '46 - Hirsh et al.)

Note: Previous items having to do with the penicillins F, G, K and X appeared in:

Bumed News Letter of 12 April 1946, page 12
Bumed News Letter of 10 May 1946, page 20

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(Not Restricted)

Abstracts of Reports on Research Projects:

X-205
Report No. 6
12 April 1946

Studies of the Effects of Air Cooling on Personnel Aboard the U.S.S. WASHINGTON (BB56).

During a cruise of the U.S.S. WASHINGTON into a tropical area, observations were made on the effects of air cooling of berthing spaces on the performance and well-being of the crew. Two groups of 20 men each were used as subjects for a number of physiological and psychological measurements. One group was berthed in air-cooled compartments and the other in mechanically ventilated compartments.

In addition to a decided preference of the men for the air-cooled compartments, daily questionnaires revealed a lower

X-205
(Cont.)

(Not Restricted)
number of personal complaints (including loss of sleep) by the men berthed in cool compartments: The men in the non-cooled compartments showed a significant decrease in body weight as compared with the "cooled group" during the period of the study as well as a small but significant inferiority in speed of decoding. Morning oral temperatures indicated that the "cooled men" had lower body temperatures. Exposure to heat was not of sufficient duration to cause appreciable heat rash in either group.

Sick call data taken from previous records of the medical department demonstrate a close agreement between the environmental temperatures and the incidence of skin afflictions. Examination of the results of drug therapy and interviews with members of the medical department indicate that cooling was the only effective means of treating many of the skin conditions.

It is believed that air cooling is not only a significant factor in affecting the morale of the men, but also may be considered as affecting the efficiency and well-being in an objective manner. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Birren et al.)

X-656
Report No. 1
21 May 1946

(Not Restricted)
An Evaluation of Nile Blue A as a Chemotherapeutic Agent.

Nile Blue A was compared with penicillin for effectiveness against infections produced by beta hemolytic streptococci, Diplococcus pneumoniae, Staphylococcus aureus, and Escherichia coli in mice.

Nile Blue A in a dose approximately one-half as great as the LD-50 was incapable of combating the infections produced by any of the organisms. Penicillin was found to be quite effective against all of the organisms with the exception of E. coli.

It appears quite unlikely that Nile Blue A would be of any practical value for use against generalized infections caused by the above organisms. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Stormont et al.)

NMRI-155
27 Feb. '46

(Not Restricted)

Studies on the Etiology of Otitis Externa, and on the In Vitro
Effect of Parachlorophenol and Penicillin on the Organisms
Involved.

Twenty-five strains of Pseudomonas sp.* were obtained from patients with otitis externa and found by biochemical and fermentative tests to resemble taxonomically Pseudomonas aeruginosa (Schroeter) Migula. These isolates were capable of producing pathological symptoms in excoriated ears of rabbits. Parachlorophenol, in a concentration of 1:4000, inhibited completely the in vitro growth of Pseudomonas sp. Parachlorophenol in suitable concentration thus also inhibits the penicillinase activity of this organism, thereby enabling penicillin to destroy Streptococcus sp. in a mixed culture with Pseudomonas sp. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Salvin)

*Since many of the isolates of Pseudomonas from human cases of otitis externa do not agree exactly with the characteristics of any species described in Bergey's "Manual of Determinative Bacteriology," these isolates are mentioned in this paper merely as Pseudomonas sp.

Note: Those interested in seeing copies of the complete reports may address their request to the Research Division, BuMed.

Opinions or conclusions contained in these reports are those of the authors. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department. Reference may be made to those reports marked "Not Restricted" in the same way as to published articles noting authors, title, source, date, project number, and report number.

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(Not Restricted)

Re-enlistment of Hospital Corps WAVES Desired: The Navy has announced plans to re-enlist 2,000 former enlisted WAVES in certain rating groups, particularly Hospital Corps personnel, for service in the Women's Reserve, United States Naval Reserve, until 1 July 1947. Hospital Corps WAVES will continue on duty in wards, laboratories and offices of Naval hospitals and dispensaries throughout the United States.

Approximately 3,000 enlisted WAVES still on active duty have already volunteered to remain in the Navy until next July. However, an additional 2,000 volunteers in certain rating groups are still needed to maintain the desired total of 5,000 enlisted women during the next 12 months. Meanwhile, legislation is pending in Congress to permit women to continue to serve in the Navy in peacetime.

The Navy is currently re-enlisting hospital apprentices and pharmacist's mates, in addition to certain other ratings.

Offices of Naval Officer Procurement throughout the country, assisted by the Navy Recruiting Service, will handle the WAVES' re-enlistment program.

All WAVES will be stationed at Naval activities in this country until such time as legislation is passed covering the status of women in the peacetime Navy. The last group of WAVES serving overseas in the Hawaiian Islands will be re-assigned to continental stations during August.

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(Not Restricted)

Changes to be Made in Copies of Manual of the Medical Department: Changes in the Manual of the Medical Department have been directed, as specified in Circular Letter 46-115 on page 31 of this issue.

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(Not Restricted)

Deadline Date Set for Submission of Applications for Transfer to Regular Navy: See Alnav 416 on page 32 of this issue.

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(Not Restricted)

Important NavMed Publication on Essentials of Internship and Residency

Type of Training in Naval Hospitals: NavMed 762 has been revised and copies are available in the Professional Division of the Bureau. This publication is of particular interest to all medical officers who are interested in or connected with the training program. It is suggested that Chiefs of Service, members of graduate training committees, members of intern committees, and all officers desiring further training should read this publication. Additional copies may be obtained by writing to the Professional Division, Bureau of Medicine and Surgery. (Professional Div., BuMed)

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(Not Restricted)

Course at the Armed Forces Staff College to Include Medical Officers:

The Armed Forces Staff College at U. S. Naval Base, Norfolk, Virginia, has asked, through Alnav 410 (page 33 of this issue), for applications for the first course of five months' duration beginning about 1 February 1947. This course represents the highest echelon of training obtainable in military operations. The course is given every six months. The Advisory Board of the Bureau of Medicine and Surgery has recommended that one medical officer attend each session, and that he be a senior commander or a junior captain. Applications are now being accepted for this course. (Professional Div., BuMed)

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(Not Restricted)

Available Residency-Type Training in Naval Hospitals: Alnav 260 of 23 May 1946 stated that applications were desired from medical officers, USN, for approved 12 months' residency-type training in certain specialties in naval hospitals, and that additional residencies would be announced later. Alnav 411 of 27 July 1947 announces that additional approved residencies are now available in naval hospitals in all specialties and include ophthalmology, otolaryngology, pediatrics, general surgery, and urology.

Those medical officers may apply who have completed, or soon will complete, one tour of duty outside the continental U.S. (sea or shore, or combination of both) and soon will be eligible for, or, are now on duty in the continental U.S. In the case of those now on shore duty in the U.S. and who otherwise qualify, their present status must be such that they would normally be due to remain ashore for at least another 12 months. Applications must include a signed agreement not to resign during the course and to remain in the Navy one year after completion of the course. An appropriate endorsement by the commanding officer is required. Applications may be submitted by dispatch. (Professional Div., BuMed)

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(Not Restricted)

Courses, Residencies and Fellowships Now Available in Civilian Institutions:

Alnav 328 of 20 June 1946 stated that applications were desired from medical officers, USN, for certain courses of from 6 to 12 months' duration in civilian institutions, and that eligibility was limited to medical officers in the rank of commander and captain. Alnav 411 of 27 July 1946 announces that additional courses and residencies have been obtained in civilian institutions for the following quotas: cardiology 1, dermatology 1, internal medicine 5, physical medicine 2, neurosurgery 2, orthopedics 2, ophthalmology 3, otolaryngology 2, pathology 1, radiology 2, general surgery 4, urology 1.

Eligibility is changed as of 9 August 1946 to: lieutenant commanders and above who (1) are due soon to be transferred to shore duty in the continental U.S., or (2) are now on duty in the continental U.S. and are due normally to remain in a shore duty status in the continental U.S. for at least 12 more months.

Applications must include a signed agreement not to resign during the course and to remain in the Navy three years after completion of the course. An appropriate endorsement by the commanding officer is required. Applications may be made by dispatch. (Professional Div., BuMed)

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(Not Restricted)

Report on Status of Training Program for Medical Officers: During recent weeks a number of naval medical officers have been selected for courses in civilian institutions, and thirty-seven have been nominated for residency-type training in naval hospitals. Many more applications remain to be reviewed by The Advisory Board of the Bureau of Medicine and Surgery. Thus far during 1946, 18 medical officers have completed courses of instruction in civilian institutions, and 163 have received six-months' or more instruction in various specialties in naval hospitals.

At the present time, a number of medical officers in naval medical activities are "on duty under instruction" in a specialty. This type of instruction is for a period of six months and should not be confused with residency-type training in a naval hospital which is an assignment for one year. Medical officers who are now "on duty under instruction" and who (1) desire to remain under training in the same branch of medicine for a longer period of time than contemplated in their present orders, or who (2) desire additional training of residency type should submit an application for residency-type training. It must be understood by such medical officers that additional training or the assignment to residency-type training is not automatic and that they must undergo the same competition as the other applicants.

(Not Restricted)

Applications for residency-type training or for "duty under instruction" from medical officers now on duty at naval hospitals should be reviewed by the Committee on Graduate Training and recommended to the Commanding Officer for endorsement. Applications from medical officers on duty in other than naval hospitals must have a suitable endorsement by the Commanding Officer.

It has been possible in some instances to obtain instruction in basic sciences at certain universities in connection with residency-type training in certain naval hospitals. In other naval hospitals, it will be possible to fulfill some of the basic science requirements while undergoing residency-type training. Courses of instruction in civilian institutions are now being obtained for next year. It is hoped to have 200 acceptable courses beginning during the period 1 July to 1 October 1947.

In brief, the Graduate Training Program is progressing as stated in the "Outline of Graduate Training Program in the Navy Medical Corps," published 1 May 1946. The program of residency-type training in certain naval hospitals is in operation and will reach full effectiveness during the period 1 September to 30 October 1946. It is hoped that medical officers realize that the Bureau of Medicine and Surgery is faced with the task of training a large number of medical officers and that it is impossible to assign all medical officers for training at one time.

To date over 100 outstanding Consultants have signified their willingness to participate in the Navy's Graduate Training Program, and additional Consultants are being selected in order to give a well rounded residency-type training in naval hospitals. The enthusiastic response of outstanding certified men of the medical profession to the graduate medical training program has been most gratifying. (Professional Div., BuMed)

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(Not Restricted)

Transfer of Reserve Dental Officers to the U.S. Navy: The attention of all Reserve dental officers is invited to ALNAV 416 (see page 32 of this issue) which requires that Reserve officers desiring to transfer to the U.S. Navy must submit their applications on or before 15 September 1946. The provisions of this Alnav do not apply to those officers who have completed less than one year's service as of 15 September 1946.

Reserve dental officers interested in transferring to the U.S. Navy who have not yet submitted their applications are advised that sufficient vacancies still exist in the Dental Corps to assure them opportunities for selection equal to those enjoyed by officers who submitted their applications at earlier dates. There has been no change in the age standards to qualify for transfer to the U.S. Navy. (Dental Div., BuMed)

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(Not Restricted)

Penicillin Calcium in Oil and Wax Available Through Naval Medical Supply Facilities: Penicillin calcium in oil and wax has recently been added to the drugs available in the Medical Supply Catalog. It is listed as Penicillin Calcium in Oil and Wax, 300,000 units per CC: 10 CC vial. Jan 1-606-785.

Romansky and his colleagues observed that this preparation resulted in adequate therapeutic blood concentrations which were maintained for from seven to ten hours following intramuscular injection. Calcium penicillin was preferred because it is less hydroscopic than the sodium salt and mixes better in the beeswax-peanut oil. Potency tests are stated to have shown no deterioration of penicillin in mixtures kept (1) in the refrigerator, (2) at room temperature, or (3) at 37° C. for periods as long as thirty to sixty days.

Repeated intramuscular injections were found to produce no necrosis of the tissues and only foreign-body reactions at the sites of injection. Few patients complained of local pain or irritation following intramuscular injection so that it does not appear necessary to incorporate a local anesthetic like butyn or metycaine. Calcium penicillin in oil and wax should not be administered by the subcutaneous route because, by this method, the incidence of sensitizing reactions with giant urticaria and angioneurotic edema is excessively high.

Attention is invited to the fact that this preparation of penicillin cannot and should not supplant other forms. Sizable stocks of other parenteral penicillins are on hand or on order. (Professional Div., BuMed)

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(Not Restricted)

Opportunities for Full-Time and Part-Time Active Duty for Reserve Medical and Dental Officers: The attention of Reserve medical and dental officers is invited to the opportunity to perform full-time active duty at one of the 15 major naval air stations of the Naval Air Reserve Training Command listed below:

NAS Dallas, Tex.	NAS Memphis, Tenn.
NAS New York, N.Y.	NAS St. Louis, Mo.
NAS Minneapolis, Minn.	NAS Livermore, Cal.
NAS Grosse Ile, Ill.	NAS Los Alamitos, Cal.
NAS Atlanta, Ga.	NAS Willow Grove, Pa.
NAS Glenview, Ill.	NAS Squantum, Mass.
NAS Columbus, Ohio	NAS New Orleans, La.
NAS Olathe, Kan.	

Additional Reserve medical officers are needed as Flight Surgeons for the various units which comprise the Organized and Volunteer Reserve components of the Inactive Reserve.

Reserve officers of the Medical and Dental Corps who are interested in full-time active duty as member of the stationkeeper staff at one of the 15 major Naval Air Stations listed above should initiate letters to the Bureau of Naval Personnel, via the Chief of Naval Air Reserve Training with headquarters at Naval Air Station, Glenview, Ill., and via BuMed, listing the stations (in order of preference) at which duty is desired. Personnel are desired in the ranks of Commander and Lieutenant Commander in the Medical Corps, and of the rank of Lieutenant in the Dental Corps. Quotas are not restricted to these ranks, however, and interested officers of any rank may apply.

Reserve officers of the Medical Corps (preferably flight surgeons) who are desirous of affiliating themselves with either the Organized or Volunteer components of the Inactive Reserve for part-time active duty with the units operating at one of the 15 Naval Air Stations above should contact directly the Commanding Officer of the station at which the units are based. Naval Air Reserve Training Units are also based at the Naval Air Stations listed below:

NAS Anacostia, D.C.	NAS San Diego, Calif.
NAS Norfolk, Va.	NAS Seattle, Wash.
NAS Jacksonville, Fla.	NAS Miami, Fla.

In the case of these latter stations, interested personnel are advised to contact the Commanding Officer of the Naval Air Reserve Training Unit (NARTU), directly, rather than the Commanding Officer of the station.

Circular Letter 46-109

29 July 1946

(Not Restricted)

To: All Ships and Stations.

Subj: Medical Stores Requisition, NavMed 4 - Preparation and Submission of.

Ref: (a) BuMed ltr TW:FL, L8-2(072), 15 April 1946 (Circular Ltr 46-68 Item 46-894 of ND Bulletin April, 1946).

1. Reference (a) is modified as indicated below:

(a) Paragraph 7(c): After the expression "etc.," add the following:

"Medical stores requisitions originating in Pacific Fleet and Pacific Ocean Areas are exceptions to the above procedure. Such requisitions shall be numbered in accordance with ComSerPac dispatches 280336 of June, 1945 and 052344 of July, 1945."

--BuMed. Ross T. McIntire.

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Circular Letter 46-110 (See page 36)

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Circular Letter 46-111

30 July 1946

(Not Restricted)

To: Commandants, Naval Districts (Continental).

Subj: Medical and Hospital Treatment for Active Duty Naval Student Personnel Attending Summer Classes.

Refs: (a) Article 1189, N. R.
(b) Part III, Chapter I, Manual Medical Department.

This letter from the Chief of BuMed takes cognizance of the fact that various schools throughout the country where active duty Naval personnel are enrolled in summer courses have made no provisions for medical services to these students and gives instructions which apply only to these summer school classes concerning (1) authorization for services, (2) nature and extent of services contemplated, and (3) form NAVMED U and certified bills for services.

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Circular Letter 46-112

30 July 1946

(Not Restricted)

To: Commandants, All Naval Districts.

Subj: Respirators, Tilting-Rotating Model, Adult, 110 Volt, AC-DC, Stock
No. 7-883-995 (Iron Lung).

1. A policy has recently been established whereby each naval hospital will be furnished at least one (1) Respirator, iron lung type, stock number 7-883-995. Procurement of sufficient quantities to equip those hospitals reporting none on hand has been instituted. As sufficient respirators become available, issue will be accomplished automatically.
2. In order to utilize all available respirators for emergency requirements to the fullest extent, it is requested that the Commandants of each naval district assume control over this equipment within their respective districts and, that all naval hospitals be directed to contact the Commandant whenever additional respirators are required. Intra-district transfers may be effected to meet emergency requests from naval hospitals within a single district.
3. If, in the event of extreme emergency, additional equipment is required over and above that available within a single district, such equipment may be requested by the Commandants from the nearest naval medical supply depot, a copy of the request being furnished Materiel Division, Bureau of Medicine and Surgery, Brooklyn, New York.

--BuMed. Ross T. McIntire.

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Circular Letter 46-113

30 July 1946

(Not Restricted)

To: All Ships and Stations.

Subj: Appointment in the Nurse Corps, U. S. Navy of Reserve Nurse Corps Officers.Refs: (a) Public Law 238, 78th Congress.
(b) AlNav 365-46.Encl: (A) List of officers appointed to the ranks indicated in the Nurse Corps, U. S. Navy.
(B) Sample form of acceptance and oath of office.

(Not Restricted)

Note: This letter of instructions from the Chief of BuMed, because of its length and the fact that it will appear in its entirety in the Navy Department Semimonthly Bulletin of 31 July 1946, is not reprinted here.

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Circular Letter 46-114

31 July 1946

(Not Restricted)

To: MedOfsCom, NavHosp (Continental)

Subj: Rheumatic Fever Patients; Transportation of, to the U. S. Naval Hospital, Dublin, Georgia.

Ref: (a) Par 16B22.2, MMD, 1945.

1. Attention is invited to ref (a). Due to the geographical location of subject hospital, air transportation via Naval Air Transport Service should be used whenever possible, with proper notification to this hospital of the estimated time of arrival together with the numbers and types of patients.

--BuMed. Ross T. McIntire

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Circular Letter 46-115

1 August 1946

(Not Restricted)

To: All Ships and Stations.

Subj: Weekly Dispatch Report of Patient Bed Capacities and Patient Census, modification of.Refs: (a) Par 5144, MMD, 1945.
(b) Par 513, MMD, 1945.

1. It is directed that subject report be changed to read "Weekly Dispatch Report of Patient Census." The patient census report shall show the number of beds occupied by personnel (exclusive of dependents) in the surgical, medical, and neuropsychiatric services. The report shall also show the number of beds occupied by dependents, Veterans Administration Beneficiaries, and the total number of beds occupied by all patients. The special treatment centers shall, in addition, report the total number of patients for each specialty for which designated.

2. In accordance with the above the Manual of the Medical Department is modified as follows:

(Not Restricted)

Delete ref (a) and substitute the following:

5144

Weekly Dispatch Report of Patient Census.--5144.1.
The medical officer in command of each naval hospital and special hospital in the United States and in the fourteenth naval district shall submit to the Bureau on Thursday of each week a Weekly Dispatch Report of Patient Census. The report shall cover the week ending at the preceding midnight. A copy of the report shall be forwarded to the district medical officer.

5144.2. The patient census report shall show the number of beds occupied by personnel (exclusive of dependents) in the surgical service, in the medical service, and in the neuropsychiatric service. This report shall also show the number of beds occupied by dependents, by Veterans Administration Beneficiaries, and the total number of beds occupied by all patients. The special treatment centers shall, in addition, report the total number of patients for each specialty for which designated.

Reference (b) line 10, column 2, page 477, change to read "Patient Census."

--BuMed. Ross T. McIntire

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Circular Letter 46-116 (See page 36)

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ALNAV 416

30 July 1947

(Not Restricted)

Subj: Deadline Date for Submission of Applications for Transfer to Regular Navy.

1. This Alnav establishes a deadline for the submission of applications for transfer of naval Reserve and temporary USN officers to the regular Navy under the provisions of BuPers Circular Letters 288-45 and 303-45. Except for officers in the categories indicated below, all eligible officers on active duty including terminal leave and all eligible officers on inactive duty who desire to request transfer to the regular Navy must submit their applications

(Not Restricted)

on or before 15 September 1946. Commanding officers, commandants of naval districts and river commands, and other officers authorized to receive applications from individuals will not accept applications after 15 September 1946. Applications received on or before 15 September 1946 will be processed through local boards and forwarded to the Bureau of Personnel in accordance with BuPers Circular Letter 288-45.

2. This deadline of 15 September 1946 does not apply to officers in the following categories:

- (a) officers who request transfer to the regular Navy as Law Specialists.
- (b) officers who will have completed less than one year's commissioned service on 15 September 1946, and officers who receive their first commission subsequent to 15 September 1946.
- (c) officers who apply for transfer as Chief Warrant or Warrant Officers for whom a deadline of 20 July 1946 was established in accordance with Alnav 335.

3. Since this Alnav applies to officers on terminal leave and inactive duty as well as to officers on active duty, all commandants of naval districts and river commands are requested to insure that the contents of this alnav receive wide publicity, including press and radio, within their respective commands.

--SecNav. James Forrestal

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ALNAV 410

26 July 1946

(Not Restricted)

Subj: U.S. Armed Forces Staff College Course.

Applications are desired from officers regular Navy Line and Staff classes 1930 to 1938 inclusive and officers approved for transfer to regular Navy of corresponding rank and commissioned service level for Armed Forces Staff College, Norfolk, Virginia. The course starts about 1 February 1947 and will be five months in length and will be considered a permanent change of duty. It is planned to provide quarters for officers and families. Mission is to train selected officers of the armed forces in joint operations. Applications should be submitted via official channels to reach BuPers (Attention: Pers-4226) prior 15 October 1946.

--SecNav. James Forrestal

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ALNAV 366

9 July 1946

(Not Restricted)

Subj: Hospitalization of Coast Guard Personnel.

Effective 1 July 1946, medical and dental stores and hospitalization furnished to U. S. Coast Guard personnel will be on reimbursable bases. Reciprocal agreement between Public Health Service and Navy Department during the war terminated as of 30 June 1946. Therefore instructions applicable lines 54 and 55 of Ration Record, NavMed HF 36, in BuMed letter 44-91, dated 22 May 1944, and included in BuMed Bulletin of Circular Letters, 1945 edition, applicable to hospitalization of U.S. Coast Guard personnel and reporting thereof in effect as of 1 July 1946. All Medical Department activities directed to comply with above instructions. Pars. 4147, 4148, and 4155, Manual of the Medical Department, USN, 1945 edition, and any other instructions which may conflict with this Alnav are hereby superseded. Modification of Manual of the Medical Department, USN, will be issued separately.

--SecNav. John L. Sullivan.

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ALNAV 372

11 July 1946

(Not Restricted)

Subj: Burial of Remains.

Effective 1 July 1946, SecNav 261900, June 1942, which directed temporary local burial remains deceased personnel Navy and Marine Corps wherever sea transportation required for return to United States, hereby rescinded. When remains can be properly embalmed or otherwise prepared and encased, return to United States will be accomplished except that air transportation will not be used for this purpose. Remains that cannot be returned shall be buried at nearest temporary American cemetery and reported on NavMed 601. Burial at sea shall be made only as last resort. Initial dispatch notifying SecNav of death shall state whether remains are to be returned or buried locally. Instructions of articles 908 and 1513, NavRegs, part 3, chapter 4, Manual Medical Department, and BuMed Circ. Ltr. 46-66, Navy Department Bulletin 30 April, will apply.

--SecNav. John L. Sullivan.

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(Not Restricted)

Disestablishment of Naval Medical Activities: As published in the Navy Department Semimonthly Bulletin of 15 July 1946, the following Naval Medical activities were disestablished as of the dates shown:

<u>Name</u>	<u>Location</u>	<u>Disestablishment Date</u>
U.S. Naval Military Government Hospital 204 and Unit	Tinian, Marianas	20 June 1946
Fleet Hospital No. 114	Samar, P. I.	15 June 1946
U.S. Naval Special Hospital	Camp Wallace, Texas	1 September 1946
U.S. Naval Hospital	Norman, Oklahoma	1 September 1946

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To: All Ships and Stations 13 July 1946 (Not Restricted)

Subj: Navy Nurse Corps Uniforms.

Ref: (a) U.S. Navy Uniform Regulations, 1941, ch. XIV, "Nurse Corps."

Enc: (A) Regulations Governing the Wearing of the Gray Seersucker Working Uniform, Reserve Blue Working Smock, and Navy Blue Slacks by Members of the Navy Nurse Corps.*

1. The Secretary of the Navy has approved the optional wearing of a gray seersucker working uniform, reserve blue working smock, and Navy blue slacks by members of the Navy Nurse Corps. These articles of uniform, with their accessories, shall be the same as those prescribed for members of the Women's Reserve, and they shall be worn in exactly the same manner as that prescribed for WAVES, with the following exceptions:

- (a) Navy Nurse Corps insignia shall be substituted for WAVE insignia.
- (b) No jacket devices shall be worn on the rounded ends of jacket lapels.

2. Pending revision of reference (a), enclosure (A) shall govern the wearing of these articles of uniform. The gray working uniform dress (cotton, rayon, or tropical worsted) previously authorized may be worn until the supply of these dresses in stock is exhausted or those in possession are worn out.

--BuPers. Felix Johnson.

* See Navy Department Semimonthly Bulletin of 15 July 1946, page 107 for enclosure.

(Not Restricted)

Circular Letter 46-110

26 July 1946

To: MedOfsCom, NavHosp (Continental)

Subj: Personnel at Naval Hospitals -- Home Town Newspaper Releases on.

Encl: 1. (HW) Ltr from SecNav (DirPubInfo) to Chief, BuMed.*

1. Enclosure 1 points out the desirability and value of the dissemination of news items concerning naval personnel to home town newspapers, radio stations and other media.
2. In compliance with the request made in enclosure 1, it is suggested that information concerning hospitalized naval personnel be forwarded to the Fleet Home Town News Center, 844 North Rush Street, Chicago (11), Illinois, in the manner described in enclosure 1. It is recommended that this duty be assigned to the officer serving as the Public Information Officer for your hospital.
3. Commanding officers are urged to furnish information where suitable and proper and to cooperate in every way with the directive of the Secretary of the Navy.

--BuMed. Ross T. McIntire

*Enclosure (with copies of letter to addressees, Comdts, ND, and DMO's) not reprinted here.

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Circular Letter 46-116

5 August 1946

(Not Restricted)

To: All NavHosp

Subj: Educational or Training Benefits and Vocational Rehabilitation provided by Public Laws 16 and 346, 78th Congress, as amended by Public Law 268, 79th Congress.

Ref: (a) Section 1507, Public Law 268, 79th Congress, approved 28 December 1945, which amends the Servicemen's Readjustment Act of 1944.

This letter of instructions from the Chief of BuMed has to do with naval hospitals attaching certain appropriate information to applications submitted by patients in naval hospitals for certain benefits under the jurisdiction of the Veterans Administration.

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